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10/690,760	10/22/2003	Remigijus Gaska	SETI-0005	5376
23550	7590	01/21/2005	EXAMINER	
HOFFMAN WARNICK & D'ALESSANDRO, LLC			NGUYEN, THINH T	
3 E-COMM SQUARE			ART UNIT	PAPER NUMBER
ALBANY, NY 12207			2818	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## BEST AVAILABLE COPY

## Office Action Summary

Application No.

10/690,760

Applicant(s)

GASKA ET AL.

Examiner

Thinh T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,9-16,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,9-12,14-16,21 and 22 is/are rejected.
- 7) ☐ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED OFFICE ACTION**

1. Applicant election of claims 1-6,9-16, and 21-22 for prosecution in the communication with the Office on 12/23/2004 is acknowledged.

### **Specification**

2. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

### **Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b/e) that form the basis for the rejections under this section made in this office action.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1,11,14,15,22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sun (U.S. Patent 5,784,399), Ueki (US patent 6,320,893) or rejected under 35 U.S.C. 102(e) as being anticipated by Slater, Jr. et al. (US patent 6,791,119)

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REGARDING CLAIM 1

Sun ( the abstract, fig 2) disclose a light emitting heterostructure comprising: a substrate ( fig 2 layer 22) a light generating structure ( fig 2 layer 28) formed over the substrate; a distributed semiconductor heterostructure Bragg reflector (DBR) structure formed ( fig 2 reference 36) over the light generating structure; and a p-type layer ( fig 2 layer 40) formed over the DBR structure .

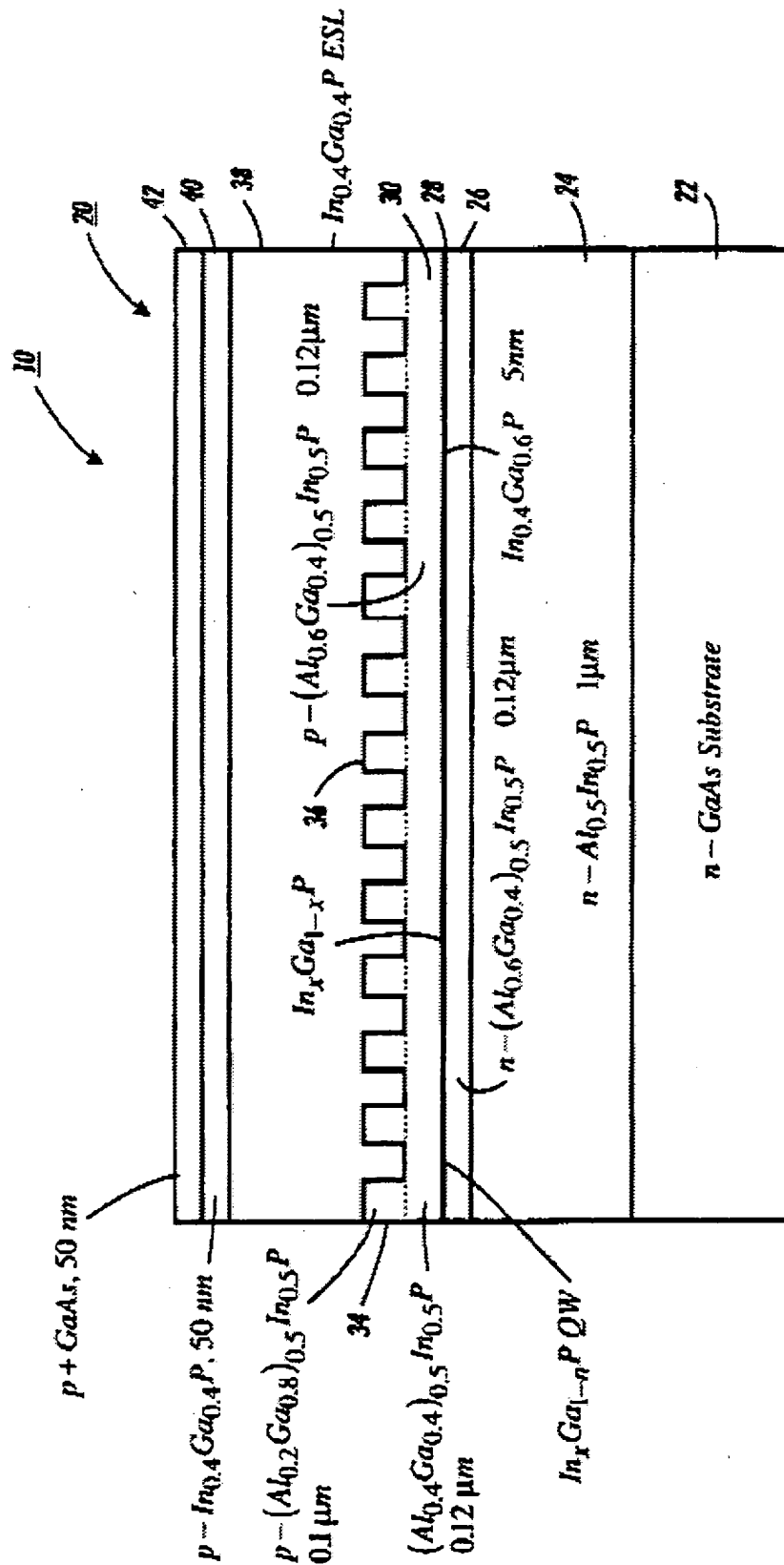
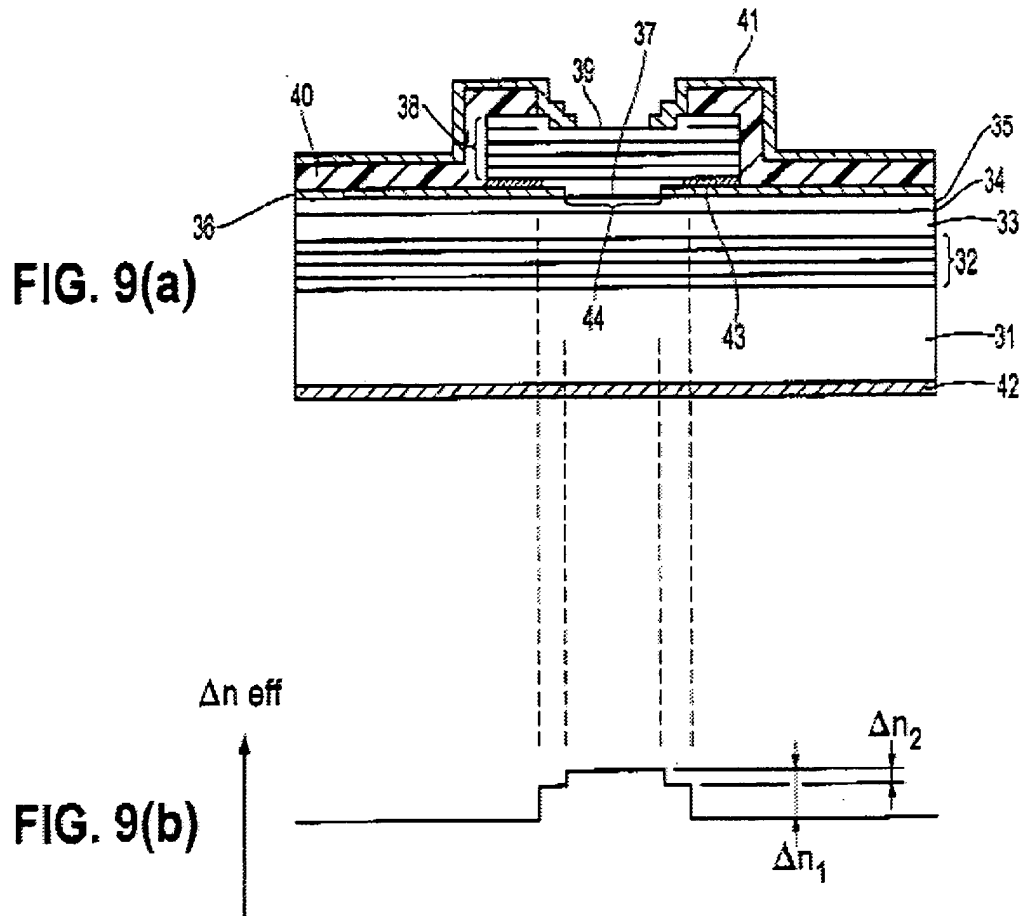
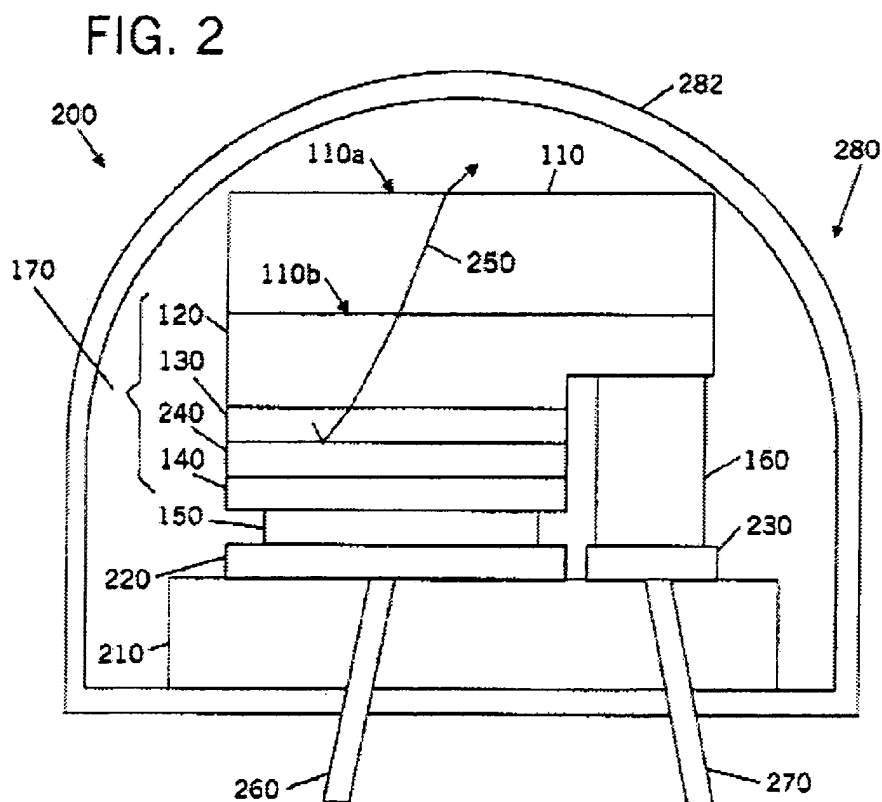


FIG. 2



And similarly , Slater, Jr. (the abstract, fig 2 with substrate layer 110, Bragg layer 240, p layer 140 ) discloses the same invention. Noted that the device of Slater is flip-chip mounted that means it is mounted upside down.



**REGARDING CLAIM 11**

Sun ( the abstract, fig 2) disclose a light emitting device comprising: a substrate ( fig 2 layer 22) a light generating structure ( fig 2 layer 28) formed over the substrate; a distributed

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semiconductor heterostructure Bragg reflector (DBR) structure formed ( fig 2 reference 36) over the light generating structure; and a p-type layer ( fig 2 layer 40) formed over the DBR structure .

Similarly , Ueki ( the abstract, fig 9 with substrate layer 31, Bragg layer 38, p layer 39 ) and Slater Jr. ( the abstract, fig 2 with substrate layer 110, Bragg layer 240, p layer 140 ) discloses the same invention.

#### REGARDING CLAIM 14

Sun (fig 3, column 4 lines 42-49) disclose a light emitting device with first and second contact( fig 3 layer 50 and 40)

Similarly, Ueki ( fig 1, layer 11 and 12 ) and Slater Jr. ( fig 2 layer 220 layer 230) disclose the same invention.

#### REGARDING CLAIM 15

Sun and Ueki ( the titles ) disclose the invention of laser devices, and Slater et al. disclose the invention of a light emitting diodes.

#### REGARDING CLAIM 22

Sun ( fig 2) disclose a n type layer ( fig 2 layer 24) formed on the substrate with the light structure formed over the n layer.

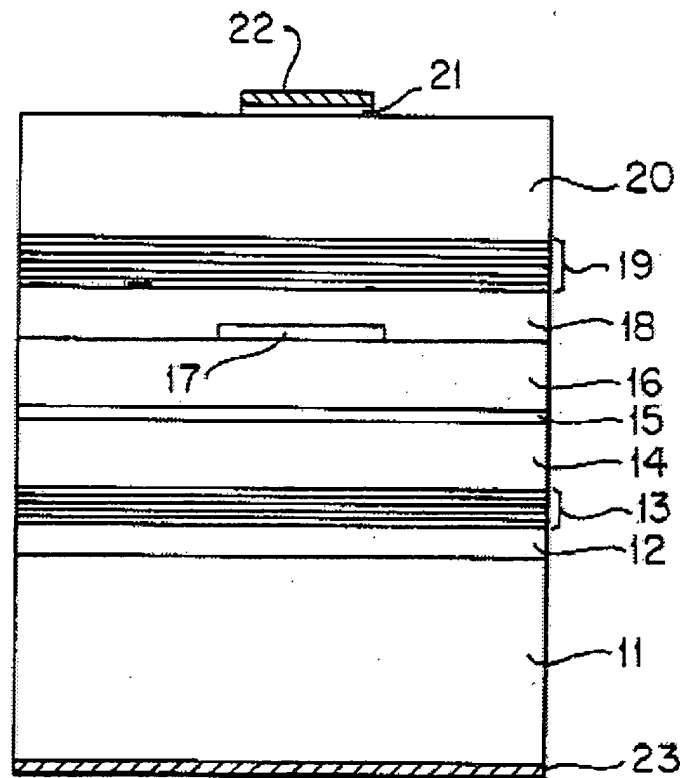
Similarly, Ueki ( fig 1, layer 12 layer 15 ) and Slater Jr. ( fig 2 layer 120, layer 130) disclose the same invention.

5. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Sugawara et al. (US patent 5,466,950) Or Ueki (US patent 6,320,893).

#### REGARDING CLAIM 2



Sugawara ( the abstract, fig 3) disclose a light emitting heterostructure comprising:  
a substrate ( fig 3 layer 11) a light generating structure ( fig 3 layer 15) formed over the substrate; a distributed semiconductor heterostructure Bragg reflector (DBR) structure formed ( fig 3 reference 19) over the light generating structure; and a p-type layer ( fig 3 layer 40) formed over the DBR structure. Additionally, Sugawara disclose a current blocking layer ( fig 3 layer 17).



**FIG. 3**

Ueki also anticipates claim 2 since the Ueki reference disclose ( fig 9(a), Column 16 line 15) insulation layer 43 which inherently serve as electron blocking layer.

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7. claims 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Sun (U.S. Patent 5,784,399), or Sugawara et al (US patent 5,466,950) or under 35 U.S.C. 102(e) as being anticipated by Slater, Jr. (US patent 6,791,119)

REGARDING CLAIM 5

Sun ( in fig 2 layer 42) discloses a contact layer formed above the DBR structure.

Similarly, Sugawara ( fig3 layer 21) and Slater, Jr. (fig 2 layer 150) disclose the same invention.

8. Claims 3,4,6,10,16,21 are rejected under 35 U.S.C. 102(e) as being anticipated by Slater Jr. et al. (US patent 6,791,119)

REGARDING CLAIM 3

Slater, jr. discloses a buffer layer ( column 7 lines 45-46 ) formed on the substrate; and a second layer ( fig 2 layer 120) formed on the buffer layer, wherein the light generating structure ( fig 2 layer 130) is formed on the second layer.

REGARDING CLAIM 4

Slater, jr. discloses a contact layer ( fig 2 layer 160 ) formed on the second layer.

REGARDING CLAIM 6

Slater, Jr. discloses a metal layer ( fig 2 layer 230) formed on the contact layer.

REGARDING CLAIM 10

Slater, Jr. discloses a ( in fig 2) a transparent substrate ( fig 2 layer 110)

REGARDING CLAIM 16,21

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Since Slater Jr. et al. (fig 2) use a device that has a substrate (fig 2 layer 110) with n type layer 120 formed on the substrate, a gallium nitride heterostructure (column 7 lines 54-65) active layer, their device is inherently capable of emitting ultra-violet light as evidenced by Nurmikko et al. (US patent 6,233,267 column 2 lines 17-35)

### **Claim Rejections - 35 USC § 103**

9. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9 and 12 are rejected under 35 U.S.C. 102(e) or being anticipated by Slater jr. et al. (US patent 6,791,119) in view of Nitta et al. (US patent 6,803,603).

Slater Jr. (the abstract, fig 3 with substrate layer 110, Bragg layer 240, p layer 140 ) discloses all the invention except for a top reflective layer formed over the DBR structure.

Nitta et al. (the abstract, in fig. 13) disclose an light emitting device with a reflective electrode layer ( fig 13 layer 307).

It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teaching by Slater Jr. with the teachings by Nitta et al. in order to come up with the inventions of claim 9 and 12 since a person skilled in the art will be motivated to produce a more efficient light emitting device as suggested by Nitta et al. in their abstract.

### **ALLOWABLE SUBJECT MATTER**

8. Claims 13 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

Claim 13 is considered allowable since the prior fails to teach the limitations :

--“ a contact layer formed on the p-type layer, wherein the reflective layer and the contact layer form at least one or a set of alternating stripes and a set of alternating square.”--

9. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

10. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

### CONCLUSION

11. The prior arts made of record and not relied upon are considered pertinent to applicant disclosure: Mueller et al. (US patent 6,417,019) discloses a phosphor converted light emitting diodes, Dawson et al. (US patent 6,563,141) discloses optical devices.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Thinh T. Nguyen



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David Nelms  
Supervisory Patent Examiner  
Technology Center 2800

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